

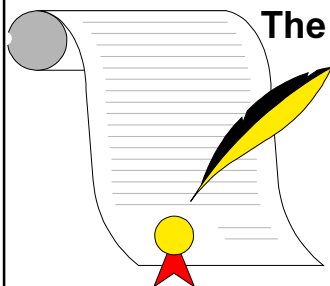
The Standards

News on the DOE Technical Standards Program



Forum

Volume 5 - Number 3 - December 1997



The Value of Registration ISO 9001 Compared to ISO 14001

By Michael A. Ross

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Michael A. Ross, environmental management systems president of the Registrar Accreditation Board, Milwaukee, Wis., is responsible for planning, directing and monitoring the organization's new EMS operations. Ross is a member of ASTM Committee D-34 on Waste Management.

Introduction

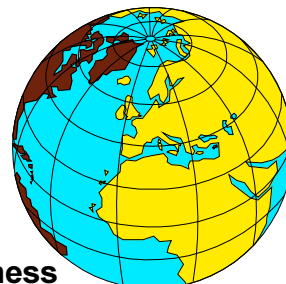
In late 1996, the International Organization for Standardization (ISO) published the first in a series of international standards addressing environmental management. Five standards have reached the stage of international standard (IS), which is the final stage of a standard's development in the ISO standards process. Two of these are the environmental management systems (EMS) standards, ISO 14001 and ISO 14004. The other three are the EMS auditing standards, ISO 14010, 14011 and 14012, which address the environmental auditing process and the qualifications for environmental auditors.

As might be suspected from the numbers, ISO 14001 and ISO 14004 contain many similarities with the quality management system (QMS) standards, ISO 9001 and ISO 9004, respectively. The EMS auditing standards, ISO 14010, 14011 and 14012 were all based on the ISO 10011 series of QMS auditing standards.

For the sake of brevity, this article will only provide a general overview of the ISO 14001 standard and briefly compare the similarities of it with the ISO 9001 standard. The intent is to show how the similarities between the ISO 14001 and ISO 9001 standards may be used by organizations to expedite implementation of an EMS and reduce the time and costs associated with doing so.

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Global Standards Conference—Building the Global Information Society for the 21st Century



New Applications and Business Opportunities—Coherent Standards and Regulations

The aim of the Conference was to facilitate the timely and coherent development of the Global Information Society/Global Information Infrastructure (GIS/GII) by identifying and promoting the resolution of outstanding standardization issues. The first steps toward a GIS/GII have already been taken and an opportunity now exists to assess actual applications and to pinpoint the factors contributing to their success. This major global conference was intended to follow-up on the identification/recognition by G7 Ministers in February 1995 of the importance of promoting interoperability to further develop the GIS/GII. This article was adapted from the Information Infrastructure Standards Panel home page, <http://www.ansi.org/iisp/iisphome.html>. Used by permission.

The Global Standards Conference on achieving the Global Information Society was held in Brussels, Belgium, on October 1-3, 1997. Hosted by the European Commission (EC) and sponsored by ISO/IEC/ITU, the event included over 400 attendees from around the globe, including representatives of the ANSI sponsored Information Infrastructure Standards Panel (IISP), who coordinated U.S. private sector and government participation in the event.

Keynote speakers included Commissioner Dr. Martin Bangemann of the EC and Ira Magaziner, senior advisor to President Clinton. The U.S. and EC differences in view over the responsibilities of the private sector and governments in promoting global standardization were highlighted in the speakers' comments at an opening press conference. Ira Magaziner em-

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a note from the Manager...

DOE Technical Standards Program

VCSs are not available from any standards development organizations (SDOs), (2) a suitable VCS can not readily be developed by an SDO, and (3) a new technical standard is essential to doing business across DOE.

The heart of DOE's technical standards (TS) development process is openness, balance of interest, and due process. Outcome—producing a useful TS that is acceptable to DOE's subject matter experts—has priority over process (running it through the mill). If a Preparing Activity (PA) follows the processes in a legitimate manner, consensus should be achieved, even though a few issues may be arbitrated, and not all commentators may be fully satisfied. Each element's Technical Standards Manager (TSM) can help his or her PA (and the rest of DOE!) ensure that a quality review and comment resolution have been conducted.

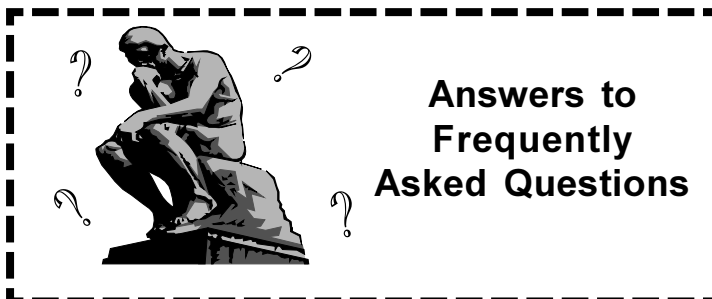
If representatives of major organizations inform a PA that there are problems with a proposed TS, they must be heeded, as a part of due process and openness. Significant disagreement

The primary purpose of the Technical Standards Program (TSP) is to provide access to existing technology and processes through the use of voluntary consensus standards (VCSs) within DOE. Another major purpose of the TSP is to provide flexible processes for developing and issuing technical standards when: (1) usable

after going through comment resolution is proof positive that the comment resolution was not adequate and should be revisited. Even if the PA believes their comment resolution is "acceptable" to the Reviewing Activity (RA), if subsequently there is disagreement from the key RAs then the PA must strive to accommodate the RAs, or, failing that, consider instead issuing a limited standard applicable only with the PA's organization. Following the perceived failure of a PA to adequately address an organization's comments, the RA can issue follow-up comments—suggested or essential—that state their position based on the PA's comment resolution. The TSP Procedures provide for further arbitration if agreement between PA and RA factions cannot be achieved.

The involved parties must work through their organizational TSMs to resolve any technical differences (and matters of application) on a proposed standard. On one hand, the process provides opportunity for comment and enables a goal to be met. On the other hand, the purpose of review and comment resolution is to establish a standard acceptable to the affected parties—the process is not an end in itself. Also remember that a technical standard is not a mandatory directive; it is an acceptable process, system, or specification that subject matter experts have established for others to voluntarily use. Once a proposed DOE technical standard passes the criteria of need and redundancy with existing VCSs and makes it through due process, then it becomes a tool for DOE, but it should never be an anchor or a wall. Help make sure that RAs participate in the TSP processes in a timely manner, and help ensure that the PAs do a complete job on comment resolution!

— Rick Serbu



Question: I am in the process of developing Work Smart Standard (WSS) sets for operations at my site. How can I obtain detailed information on the WSS process, including sample lists of WSSs that have been developed at other sites?

Answer: Your first and best choice would be to go to the Department Standards Committee home page (<http://www.dsc.doe.gov/index.html>). As an alternative approach, search the Internet. Enter the following phrase (use the quotation marks as shown to invoke a "phrase search") in your Internet browser search engine: "Work Smart Standards".

Question: What is the best way to find out the status of specific DOE standard projects? I realize that I can search the TSP Home Page, but if a standard has been finalized, I do not know the number assigned to it. Is there an easier way than looking for titles by scrolling through the lists of "Approved DOE Technical Standards" or "Draft DOE Technical Standards?"

Answer: The search engine offered in the previous version of the TSP Home Page did not allow searches to be limited to either the Approved or Draft DOE standards lists. However, the new TSP Home Page (placed in operation on December 2, 1997) allows searching of specific lists. You can also obtain this information by contacting Marty Marchbanks, 423-241-3658, mmf@ornl.gov, and requesting a search of the internal TSPO standards database.

Question: For some reason, I cannot access some of the DOE technical standards that are on the TSP Home Page in PDF format. What could be the problem?

Answer: You are probably not using the latest version (3.01) of Acrobat® Reader®. The documents now being placed on the TSP Home Page are created for access by version 3.01. Some of the improvements in this version include an enhanced search capability. You can obtain a free copy of the reader software via the Internet <http://w1000.mv.us.adobe.com/prodindex/acrobat/readstep.html>.

Question: How do I go about setting up a DOE topical committee?

Answer: The primary contacts and some general guidelines are given in this newsletter in the new section, "Topical Committee Developments." The following is offered as additional information.

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NASA Re-Engineers Agency Using ISO 9000

Article contributed by Carl Schneider, National Aeronautics and Space Administration

NASA, as all other federal agencies, is facing a new environment that is customer focused and sensitive to efficiency and effectiveness. It is being restructured to comply with the Government Performance and Results Act (GPRA) while implementing the numerous acquisition reforms specified by the Office of Federal Procurement Policy (OFPP). NASA's Administrator, Mr. Daniel Goldin, has established a vision for the agency that parallels a corporate strategy. This is articulated through the NASA Strategic Plan and the NASA Strategic Management Handbook. Essentially, these documents describe a model where the agency is restructured into four enterprises that represent the diversified missions of the agency. The enterprises are Human Exploration and Development of Space, Mission to Planet Earth, Space Science, and Aeronautics. The four cross-cutting processes that drive these enterprises are Provide Aerospace Products and Capabilities, Strategic Management, Generate Knowledge, and Communicate Knowledge. It readily becomes apparent that this new operating structure requires redefinition of many of the institutional processes both at Headquarters and the ten field centers. This is where ISO 9000 plays an essential role.

During November 1996, Mr. Goldin directed the agency to implement ISO 9000 at all field installations and become third-party registered by September 1999. He stated, "We are leaders in the world of science and technology. We must also be leaders in the world of quality. To this end, I am requiring that the agency be third-party certified in our key processes, by an internationally recognized registrar, to ISO 9001." This was a unique challenge that forced all levels of NASA management to orient their priorities to key process definitions, evaluating process efficiencies and effectiveness, and finally to document the "why's", "what's" and "how to's" in policy statements, system level procedures, and work instructions. This redirection, effectively, was a culture shock to a predominantly research and development organization.

After the expected initial reluctance and resistance, NASA senior managers have since become committed to the ISO 9000 initiative and in many cases have created ISO 9000 project offices at the NASA Centers with dedicated staffs to ensure that the transition flows smoothly. The Johnson Space Center, in Houston, Texas, is the furthest along in the certification process of all centers and anticipates third-party certification by February 1998.

The success of this initiative is contingent on how it is managed and portrayed to the NASA work force. Care was taken not to portray this as another new, possibly short lived, management initiative, but rather a common sense commercial practice to implement the changes evolving during the reengineering process. The third-party certification would then validate, beyond reproach, that the agency has succeeded in implementing the required structural and operational changes. The ISO 9000 implementation process is growing

stronger as organizations begin to realize dividends from streamlined key processes and a more motivated work force that better understands their roles and responsibilities in making NASA a success. Care is taken during the certification process to remain focused on defining and implementing the new core processes and not fixating on acquiring the registration certificate.

An interesting side benefit to this initiative has been industries' voluntary efforts to transition to ISO 9000 and third-party certification at no cost to the government. This is especially true of many of the large prime contractors that have NASA contracts. Many NASA contractors are predicting that NASA will be imposing third-party certification as a contract requirement as more of the benefits are understood and realized by NASA. The jury is still out at this time.

In conclusion, NASA has embarked on a journey consistent with many large corporations that stresses customer satisfaction, consistent and high quality products, and a recognized preeminence in quality management. This is a win-win proposition with a resultant government agency that looks and operates like a major corporation and a complementary supplier base that operates on similar quality management principles.

NASA

Global Standards Conference . . . (Continued from Page 1)

phasized his commitment to "interoperability over standardization" and that the private sector should lead and allow markets to develop. He stated that "it is dangerous for governments to force the pace of standardization."

Commissioner Bangemann argues that "there is a clear-cut interest of the consumer not to have a fragmented market . . . We do believe that the involvement of public authorities can help in standardization."

The second day of the conference was devoted to four parallel workshops coordinated by different geographical regions:

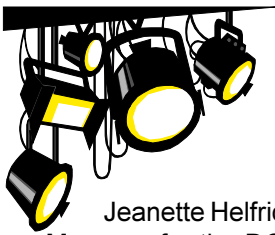
- Theme 1: Electronic Commerce (U.S.)
- Theme 2: Service to the Public (Europe)
- Theme 3: The Individual (Canada)
- Theme 4: Communications Infrastructure Interoperability (Japan)

The third day was devoted to workshop reports, an overall review of the conference, and panel discussion of the key issues identified in the conference. Some of the key issues included:

- Interoperability: standards must focus on the interface, not on the implementation.
- Markets (electronic commerce): should be self-regulated and private sector driven.
- Technology: Avoid stifling innovation—no standards for standards sake.
- Global Legal & Regulatory Framework: Harmonization is required, but focus on resolving problems vs. framework creation.

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Technical Standards Manager Spotlight



Jeanette K. Helfrich
Technical Standards Manager
Department of Energy
Office of the General Council



Jeanette Helfrich has been the Technical Standards Manager for the DOE Office of General Counsel since 1995. Her involvement in the Technical Standards Program (TSP) includes reviewing documents for legal sufficiency and advising the TSP on new legal developments. Recently, she has concentrated on the revisions to OMB Circular A-119 concerning agency use of voluntary consensus standards required by Public Law (P.L.) 104-113.

Jeanette told *The Standards Forum*, "The requirement for agencies to use voluntary consensus standards comes at an opportune time for DOE. The mechanism for selecting and using standards developed by the Department Standards Committee (DSC) in its Work Smart Standards (WSS) process (formerly Necessary and Sufficient), provides a good framework for implementing P.L. 104-113. The requirement challenges the TSP to help DOE programs make the transition from developing their own standards to using voluntary consensus standards. OMB A-119 may also focus the TSP on the use of standards in the contracting process and the reports that may be required considering DOE's large management and operating contracts."

Jeanette works for Civilian Nuclear Programs in the Office of General Counsel, preparing rulemakings, interpretations, directives and standards in connection with DOE nuclear safety requirements. Currently, she is co-chairperson, along with Ben McRae of the same office, of the Price-Anderson Act Task Force. The Task Force is charged with writing a report to Congress due August 1, 1998, containing DOE's recommendations for continuation, modification, or repeal of the indemnification provisions of the Price-Anderson Act for legal liability for nuclear incidents. "Other recent legal developments affecting the TSP include the requirements for 'congressional notification' of directives and standards that an agency develops," Jeanette said. "When the TSP circulates draft standards for review by Departmental elements, the OGC must make a determination with respect to whether congressional notification is required. If notification is required, the TSP provides copies of the final

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—Jeanette K. Helfrich

published standard to the OGC for transmission to Congress." Congress established this notification requirement in the Small Business Regulatory Enforcement Fairness Act of 1996, 5 U.S.C. 801-804. In addition, several recent court cases brought against DOE have emphasized the need for the TSP and other programs that are planning to develop new directives or standards that would apply directly or indirectly to contractor employees or other members of the public, to consult with OGC as early as possible in the development process for advice concerning "notice and comment rulemaking" under the Administrative Procedure Act (APA).

After working for several years at a private litigation law firm in Washington, D.C., Jeanette joined DOE in 1982. At DOE, Jeanette litigated administrative and judicial cases under the petroleum pricing regulations for DOE's Economic Regulatory Administration. She handled cases before DOE's Office of Hearings of Appeals, the Federal Energy Regulatory Commission, and various bankruptcy and other federal courts. In 1995, she joined the Office of Civilian Nuclear Programs. Jeanette obtained her law degree from the University of Florida and has a bachelor's and master's degree in music from the University of Kansas. Jeanette grew up on a farm near Dodge City, Kansas and lived in Ann Arbor, Michigan; Stockholm, Sweden; and Gainesville, Florida before moving to the Washington, D.C. area in 1980. Her hobbies include traveling abroad, rock climbing, and mountaineering.

Global Standards Conference...(Continued from Page 3)

In his closing comments, Dr. Stefano Micossi of the EC referred to Commissioner Bangemann's suggestion of an "... international charter that would provide a framework of principles and guidelines for international discussion on information society related issues ... that would set out general principles rather than legally binding rules."

It was agreed that the conference reports constituted a summary of events by rapporteurs and not consensus conclusions or recommendations. The conference allowed international participants to exchange views on a wide variety of GII-related issues. For a more complete review of the conference, including conference reports, see the official conference Internet site at <http://www.ispo.cec.be/standards/conf97/>



How Much Health and Safety Do You Have to Manage in ISO 14001?

By Alan Knight, globeNet Correspondent

Reproduced from the Global Environment & Technology Foundation (GETF) Website, globeNet™, <http://www.iso14000.net/>, November 12, 1997.

This is a question that I am getting more and more often from clients as they grapple with implementing ISO 14001. Companies that manage the environment and health and safety separately try to avoid the question as much as they can. They have organizational structures and cultures that have attempted to keep the functions apart. They have often reached some sort of equilibrium that they do not want to have upset by their decision to implement ISO 14001. They point to the fact that the standard clearly states in the introduction that it applies to the environment only. They point to the fact that ISO itself has discussed the matter of health and safety management as a separate issue.

Other organizations, those that already have some level of integration of the environment, health, and safety functions, are somewhat more troubled by a too easy distinction between the environment on the one hand and health and safety on the other. They have organizational structures and cultures that have found ways to beneficially integrate the functions. They do not want to lose these benefits because of their decision to implement ISO 14001. They point to the fact that the standard includes the word "human" in the definition of "environment" and that many environmental aspects have associated human health impacts. They point to the increasing number of articles, books and conferences that promote the value of integration.

The issue usually hits home when a company first gets into the serious business of identifying its aspects. Where do you draw the line? What is an environmental aspect and what is a health and safety aspect? I have heard many responses to these questions. One metaphor often used is that there is "virtual" relationship between the two, meaning, I suppose, that you can draw the boundaries wherever you wish to suit the way your organization is structured, or perhaps the needs of the moment—a sort of situational ethics for determining significant environmental aspects. I hear some say that if it is covered by occupational health and safety legislation or regulation leave it out. Others argue that all of industrial hygiene should be included.

I think this question needs to be clarified as quickly as possible. I say this because some of the divergent opinions I have mentioned above have come from third-party registrars.



I have developed the following response:

1. An aspect must be an environmental aspect, that is, a release to air or water, a contamination of land, solid or hazardous waste, energy and material use and so on. A sore back caused by an awkward working position is an occupational safety and health issue, but it is not the result of an environmental aspect and would not be included.
2. An environmental aspect that has an associated human impact is included in the EMS. Thus noise is included, not just the noise that affects the community outside the fence, but the noise that affects employees in the plant.

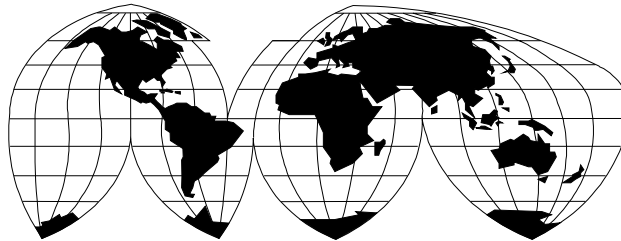
The next question then has to do with putting in place appropriate objectives to respond to these aspects. With ISO 14001 the focus remains on what you can control. You are still managing the environmental aspect, that is to say, the noise. You are not being asked to manage the associated impact. This is a potential source of confusion since managing or controlling impacts and not aspects is often the subject of health and safety regulation.

You are required, for example, to wear ear plugs. You must wear a respirator. You must wear a sealed suit. These requirements presuppose that you will not be controlling the aspects acceptably and that therefore you must put in place measures to mitigate any impact. This is the domain of occupational health and safety management. But not in isolation. It must be acknowledged that the aspect is part of the management issue and appropriate objectives for controlling

it must be part of the management equation.

In the end ISO 14001 is still an environmental and not a health and safety management system. But exposure to environmental aspects can cause impact on humans and must therefore be included in the EMS.

The World of Standards



NEWS BRIEFS

ISO 14000 Market Summary

Reproduced from the Global Environment & Technology Foundation (GETF) Website, globeNet™, <http://www.iso14000.net/>, November 1997.



As it stands now, no one is quite sure what the ISO 14000 market holds for the future. How much does it cost to implement ISO 14000, and what additional resources are necessary for independent registration? Will third-party registration be a condition for doing business? Will customers require registration or proof of implementation during the procurement process? Will insurance firms as well as banking organizations provide lower cost coverage and loans for ISO 14001 registered companies?

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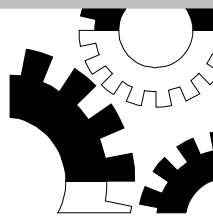
News Briefs (Continued from Page 5)

To help clear up some of the confusion in this area, the Global Environment & Technology Foundation compiled the following facts and figures so you, as a member of the globeNet community, could decide how and if ISO 14000 will impact your organization.

- Based on current market trends, it is projected that there will be at least 150,000 companies registered to ISO 14001 by the year 2002.
- These current trends show a cumulative 5900% market growth rate of ISO 14000 registration.
- Europe currently holds the greatest number of ISO 14001 and Eco-Management and Audit Scheme (EMAS) registrations combined, with Asia holding the second greatest number of single ISO 14001 certificates. North America's registrations are predicted to increase significantly by 2002.
- ISO 14000 target markets are and will be predominated by the electronics, pharmaceutical, chemical, and automotive sectors.
- ISO 14000 implementation costs, depending on company size, generally range from \$24,000 to \$128,000.
- ISO 14000 implementation costs consist mainly of internal costs and consultant fees, with a minimal percentage spent on actual certification.
- By 2002, companies registering to the standard will be spending over \$20 billion in ISO 14000 implementation costs.
- Case studies have shown significantly more benefits than barriers for ISO 14000 implementation.
- ISO 9000 Quality Management System registration has shown significant growth in the U.S. and Canada over the past four years.
- North America has over 1,000 companies registered to ISO 9000.
- The UK and the rest of Europe have consistently held a significantly higher percentage of the ISO 9000 market share than the rest of the world.

New TSP Functional Areas

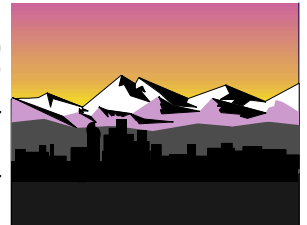
At the July 1997 meeting of the DOE Technical Standards Managers' Committee (TSMC), the use of a new set of standardization areas for categorizing DOE technical standards projects was discussed. Standardization areas have been used for many years in Department of Defense (DoD) standards activities. The concept was derived from the Federal Acquisition Regulations (Title 10, Section 2451). DoD broadened the concept to be specific to military acquisitions and published the categories in DoD Cataloging Handbook H2-1. DoD uses three types of standardization categories: Federal Supply Groups (FSG) for broad categories such as pumps, aircraft, etc.; Federal Supply Classes (FSC) for more detailed recognition of items within the FSGs, such as positive displacement pumps or aircraft wheels; and Standardization Areas to include those activities that would not fit within FSGs and FSCs, such as Configuration Management. DoD publication SD-1 defines each of the FSGs, FSCs, and Areas and assigns a specific person to control acquisitions.



Since 1991, the DOE Technical Standards Program (TSP) has used the standardization area categories employed by DoD. However, since the TSP has been primarily oriented toward management activities (i.e., training, good practices, etc.), the need for improved categorization of DOE technical standards was recognized. The need was specifically identified by the DOE Lessons Learned Program when it was determined that several new (or more specific) standardization categories were needed to track a variety of lessons learned and relate the outcomes to other programs and documents within the DOE complex. Lessons Learned Program personnel worked with the Technical Standards Program Office (TSPO) to develop an expanded list of areas (now referred to as functional areas). The new list of functional areas is expected to conform to the Government records management system used by the National Archives and organizations such as the National Information and Records Management Association. Additionally, the new functional areas list supports the current DOE effort to form topical committees for handling technical/management issues to categorize lessons learned, support training where needed and develop technical standards to reflect operating experience and prevent recurring conditions. The complete listing of the expanded functional areas is available from the TSPO and will be published in the next issue of DOE-TSL-2, *Directory of Points of Contact for the DOE Technical Standards Program*.

TSMC Meeting

The Department of Energy (DOE) Technical Standards Managers' Committee (TSMC) met on December 4–5, 1997, in Denver, Colorado. Highlights from the meeting are presented below.



1. DOE Environmental Management System (EMS) Topical Committee (TC) - Larry Stirling, DOE/EH-412, presented a special report on the development of this TC. He briefly described the recently drafted charter and also reported that participants are now being sought. Interested persons should contact Larry at 202-586-2417, FAX 202-586-0955, or Email John.Stirling@eh.doe.gov.
2. Status of Program Guidance Documents - Rick Serbu reported that the revision of OMB Circular A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, is nearing completion. O 252.1, *Technical Standards Program* and G-252.1-1, *Implementation Guide for the Technical Standards Program* are also in the final draft stage. Copies of these documents will be Emailed to the TSMs for comment. Also, Norm Schwartz described a study he made in which the requirements from DOE Order 1300.2A, *Department of Energy Technical Standards Program*, were listed and cross-referenced with their counterparts in the various TSP guidance documents.

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Standards *Actions*

DOE Documents Recently Published

DOE employees and DOE contractors may obtain copies from the DOE Office of Scientific and Technical Information (OSTI), P.O. Box 62, Oak Ridge, Tennessee 37831; telephone 423-576-8401 or FAX 423-576-5728.

Subcontractors and the general public may obtain copies from the U.S. Department of Commerce, Technology Administration, National Technical Information Service, Springfield, Virginia 22161; telephone 703-487-4650 or FAX 703-321-8547.

Copies of DOE technical standards (i.e., DOE Standards, Specifications, Handbooks, and Technical Standards Lists) are also available on the Technical Standards Program home page, URL <http://apollo.osti.gov/html/techstds/techstds.html>.

Non-Government Standards

American National Standards Institute

The American National Standards Institute (ANSI) publishes coordination activities of non-Government standards (NGS) bi-weekly in *ANSI Standards Action*. Please note that distribution of *ANSI Standards Action* is normally made only to individual members of ANSI or in group mailings to site members of ANSI. For information on site membership, ask your local ANSI contact. For information on individual or group ANSI membership, call Susan Bose at 212-642-4948, Email sbose@ansi.org. For further information on distribution policies of ANSI publications, call the ANSI distribution manager at 212-642-4952.

Copies of *ANSI Standards Action* and ANSI-published documents may be obtained from ANSI, 11 West 42nd Street, New York, NY 10036 (212-642-4900, FAX 212-302-1286). Comments on listed draft standards may be submitted by contacting the standards developing organization for information.

The following listings are extracted from *ANSI Standards Action* and are representative of NGS development activities that may be relevant to DOE operations. Refer to *ANSI Standards Action* for a complete listing of changes and new publications, standards developing organizations, and additional information about submitting comments.

The following American National Standards are currently in coordination:

- ASHRAE 133P, *Method of Testing Direct Evaporative Air Coolers* (new standard); comments due January 8, 1998.
- ASHRAE 150P, *Method of Testing the Performance of Cool Storage Systems* (new standard); comments due January 8, 1998.
- ASHRAE 153P, *Method of Testing for Capacity Rating of Four-Way Refrigerant Reversing Valves* (new standard); comments due January 8, 1998.

- ASME NUM-1a, *Rules for Construction of Cranes, Monorails, and Hoists* (supplement to ANSI/ASME NUM-1-1996); comments due January 8, 1998.

- ASME QFO-1, *Certification of High Capacity Fossil Fuel Fired Plant Operators* (new standard); comments due January 8, 1998.

- ASTM D3844, *Guide for Labeling Halogenated Hydrocarbon Solvent Containers* (new standard); comments due December 22, 1997.

- ASTM D4126, *Specification for Vapor-Degreasing Grade and General Solvent Grade 1, 1, 1-Trichloroethane* (new standard); comments due December 22, 1997.

- ASTM E927-91(1997), *Specification for Solar Simulation for Terrestrial Photovoltaic Testing* (new standard); comments due January 8, 1998.

- ASTM E948-95, *Test Methods for Electrical Performance of Non-Concentrator Terrestrial Photovoltaic Cells Using Reference Cells* (new standard); comments due January 8, 1998.

- ASTM E1039-94, *Test Method for Calibration and Characterization of Non-Concentrator Terrestrial Photovoltaic Reference Cells Under Global Irradiation* (new standard); comments due January 8, 1998.

- ASTM E1171-93, *Test Method for Photovoltaic Modules in Cyclic Temperature and Humidity Environments* (new standard); comments due January 8, 1998.

- ASTM E1328-94, *Terminology Relating to Photovoltaic Solar Energy Conversion* (new standard); comments due January 8, 1998.

- ASTM E1596-94, *Test Method for Solar Radiation Weathering of Photovoltaic Modules* (new standard); comments due January 8, 1998.

Technical Standards Program

Document Status as of 11/26/97

In Conversion	In Preparation	Out for Comment	Published in Past 30 Days
4	37	22	0

Total in process = 59

Standards Actions (Continued from Page 7)

- AWS B2.1, *Specification for Welding Procedure and Performance Qualification* (new standard); comments due January 8, 1998.
- ICEA S-94-649-1997, *Concentric Neutral Cables Rated 5,000-46,000 Volts* (new standard); comments due January 8, 1998.
- IEEE 399, *Recommended Practice for Power Systems Analysis* (revision of ANSI/IEEE 399-1990); comments due January 8, 1998.
- IEEE 493, *Recommended Practice for Design of Reliable Industrial and Commercial Power Systems (IEEE Gold Book)* (revision of ANSI/IEEE 493-1990); comments due January 8, 1998.
- NAAMM HMMA 801-97, *Glossary of Terms for Hollow Metal Doors and Frames* (new standard); comments due January 8, 1998.
- NCCLS GP17-A, *Clinical Laboratory Safety; Approved Guideline* (new standard); comments due January 8, 1998.
- SAE AMS 2759/9, *Hydrogen Embrittlement Relief (Baking) of Steel Parts* (new standard); comments due January 8, 1998.
- SAE AMS 2371F, *Quality Assurance Sampling and Testing Corrosion and Heat Resistant Steels and Alloys Wrought Products and Forging Stock* (new standard); comments due January 8, 1998.

The following newly published American National Standards are available from ANSI:

- ANSI/NFPA 79-1997, *Electrical Standard for Industrial Machinery*.
- ANSI S2.13/1-1996, *Mechanical Vibration of Non-Reciprocating Machines - Measurements on Rotating Shafts and Evaluation - Part 1: General Guidelines*.
- ASME NUM-1—1996, *Rules for Construction of Cranes, Monorails, and Hoists (With Bridge or Trolley or Hoist of the Underhung Type)*.

The following international standards are currently in coordination (comment due dates follow each entry):

- 3D/53/FDIS, IEC 61360-2: *Standard data element types with associated classification scheme for electric components - Part 2: EXPRESS dictionary schema* - December 15, 1997.
- 15C/849/FDIS, IEC 61061-1: *Non-impregnated densified laminated wood for electrical purposes - Part 1: Definitions, designation and general requirements* - December 1, 1997.
- 32/284/FDIS, Draft IEC 60143-3: *Series capacitors for power systems - Part 3: Internal fuses* - December 1, 1997.
- 64/982/FDIS, Draft IEC 60364-7-711: *Electrical installations of buildings - Part 7: Requirements for special installations of locations - Section 711: Exhibitions, shows and stands* - December 15, 1997.
- 82/185/FDIS, Draft IEC 60904-8: *Photovoltaic devices - Part 8: Measurement or spectral response of a photovoltaic (PV) device* - December 15, 1997.

- 88/85/FDIS, Draft IEC 61400-12: *Wind turbine generator systems - Part 12: Wind turbines power performance testing* - December 1, 1997.
- 90/44/FDIS, IEC 61788-1, Ed. 1: *Superconductivity - Part 1: Critical current measurement - DC critical current of Cu/Nb-Ti composite superconductors* - December 15, 1997.
- 93/75/FDIS, IEC 61690-1: *Electronic Design Interchange Format (EDIF) - Version 3.0.0 Level 0 - Information model* - December 1, 1997.
- 94/73/FDIS, Draft IEC 61810-5: *Electromechanical non-specified time all-or-nothing relays - Part 5: Insulating coordination* - December 15, 1997.
- EN 474-1: 1994/prA1, *Earth-moving machinery - Safety - Part 1: General requirements* - February 18, 1998.
- EN 50014: 1997/prA1:1997, *Electrical apparatus for potentially explosive atmospheres - General requirements* - February 7, 1998.
- EN 50086-2-4: 1994/prA1: 1997, *Conduit systems for electrical installations - Parts 2-4: Particular requirements for conduit systems buried underground* - February 7, 1998.
- EN 61429: 1996/prAA: 1997, *Marking of secondary cells and batteries with the international recycling symbol ISO 7000-1135* (for information).
- ISO/DIS 7168-1, *Exchange of air quality data - Part 1: General data format (revision, in part, of ISO 7168: 1985)* - January 23, 1998.
- ISO/DIS 10303-23, *Industrial automation systems and integration - Product data representation and exchange - Part 23: Implementation methods: C++ language binding to the standard data access interface* - January 23, 1998.
- ISO/DIS 13623, *Petroleum and natural gas industries - Pipeline transportation systems* - January 16, 1998.
- ISO/DIS 13999-1, *Protective clothing - Gloves and arm guards for protection against cuts and stabs by hand knives - Part 1: Chain mail gloves and arm guards* - January 23, 1998.
- ISO/DIS 14024, *Environmental labels and declarations - Type I environmental labelling - Guiding principles and procedures* - January 23, 1998.
- ISO/DIS 15167, *Petroleum products - Determination of particulate content of middle distillate fuels - Laboratory filtration method* - January 23, 1998.
- prEN 9000-3 REVIEW, *Quality management and quality assurance standards - Part 3: Guidelines for the application of ISO 9001: 1994 to the development, supply, installation and maintenance of computer software (ISO/FDIS 9000-3: 1997)* (for information).
- prEN 12976-1, *Thermal solar systems and components - Factory made systems - Part 1: General requirements* - March 1998.
- prEN 12977-2, *Thermal solar systems and components - Custom built systems - Part 2: Test methods* - March 9, 1998.

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Standards Actions (Continued from Page 8)

- prEN 13016-1, *Liquid petroleum products - Vapour pressure - Part 1: Determination of air saturated vapour pressure (ASVP)* - February 18, 1998.
- prEN 50216-10-5, *Power Transformer and reactor fittings - Part 10: Cooling equipment - Section 5: Oil flow indicators for power transformers* - February 7, 1998.
- prEN 50286, *Electrical insulating protective clothing for low-voltage installations* - February 7, 1998.

The following newly published international standards are available from ANSI:

- IEC 60204-1: 1997, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements.*
- IEC 60364-5-52: 1993/Amd. 1: 1997, *Amendment 1 - Electrical installations of buildings - Part 5: Selection and erection of electrical equipment - Chapter 52: Wiring systems.*
- IEC 60672-3: 1997, *Ceramic and glass-insulating materials - Part 3: Specifications for individual materials.*
- IEC 60870-6-802: 1997, *Telecontrol equipment and systems - Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations - Section 802: TASE.2 Object models.*
- IEC 60871-1: 1997, *Shunt capacitors for a.c. power systems having a rated voltage above 1000 V - Part 1: General - Performance, testing and rating - Safety requirements - Guide for installation and operation.*
- IEC 61275: 1997, *Radiation protection instrumentation - Measurement of discrete radionuclides in the environment - In situ photon spectrometry system using a germanium detector.*
- IEC 61621: 1997, *Dry, solid insulating materials - Resistance test to high-voltage, low-current arc discharges.*
- IEC 61811-51: 1997, *Electromechanical all-or-nothing relays - Part 51: Blank detail specification - Electromechanical all-or-nothing telecom relays of assessed quality - Non-standardized types and construction.*
- IEC 61836: 1997, *Solar photovoltaic energy systems - Terms and symbols.*
- ISO 140-1: 1997, *Acoustics - Measurement of sound insulation in buildings and of building elements - Part 1: Requirements for laboratory test facilities with suppressed flanking transmission.*
- ISO 1803: 1997, *Building construction - Tolerances - Expression of dimensional accuracy - Principles and terminology.*
- ISO 5925-2: 1997, *Fire tests - Smoke control door and shutter assemblies - Part 2: Commentary on test method and test data application.*
- ISO 7624: 1997, *Petroleum products and lubricants - inhibited mineral turbine oils - Determination of oxidation stability.*
- ISO 9553: 1997, *Solar energy - Methods of testing preformed rubber seals and sealing compounds used in collectors.*
- ISO 10525: 1997, *Counterbalanced trucks handling freight containers of 6 m (20 ft) length and above - Additional stability tests.*

- ISO 11114-1: 1997, *Transportable gas cylinders - Compatibility of cylinder and valve materials with gas contents - Part 1: Metallic materials.*
- ISO 12803: 1997, *Representative sampling of plutonium nitrate solutions for determination of plutonium concentration.*

American Society for Testing and Materials

Standards activities of the American Society for Testing and Materials (ASTM) are published monthly in *ASTM Standardization News*. Orders for subscriptions or single copies of *ASTM Standardization News* may be submitted to ASTM, Subscription Dept.-SN, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428-2959. For information regarding ASTM membership, contact the Membership Services Department at 610-832-9691 (FAX 610-832-9667). ASTM publications may be ordered from the ASTM Customer Services Department at 610-832-9585 (FAX 610-832-9555). Comments on listed draft standards may be submitted by contacting the ASTM Standards Coordination Department at the above address. Questions may be addressed to the Technical Committee Operations Division at 610-832-9672 (FAX 610-832-9666). ASTM has developed a World Wide Web home page at the following URL: <http://www.astm.org>. The following listings are extracted from *ASTM Standardization News* and are representative of NGS development activities that may be relevant to DOE operations.

The following ASTM standards are currently in coordination: (the due date for all items is December 10, 1997).

- New Standard, *Test Method for Determination of Ply Adhesion Strength of Reinforced Geomembranes* (Ref. Z1882Z).
- New Standard, *Test Method for Field Measurement of Hydraulic Conductivity Limits of Porous Materials Using Two Stages of Infiltration From a Borehole* (Ref. Z2509Z).
- New Standard, *Guide for Painting Inspectors (Concrete and Masonry Substrates)* (Ref. Z4026Z).
- New Standard, *Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems (EIFS) Joints* (Ref. Z5750Z).
- New Standard, *Test Method for Carbon (Total) in Uranium Oxide Powders and Pellets by Direct Combustion-Infrared Detection Method* (Ref. Z5935Z).
- New Standard, *Test Method for Radiant Protective Performance of Flame-Resistant Clothing Materials* (Ref. Z6126Z).
- New Standard, *Guide for Coring and Logging Cement- or Lime-Stabilized Soil* (Ref. Z6187Z).
- New Standard, *Test Method for Evaluation of Flame-Resistant Clothing for Protection Against Flash Fire Simulations Using An Instrumental Manikin* (Ref. Z6289Z).
- New Standard, *Test Method for Uranium in Drinking Water by High-Resolution Alpha-Liquid-Scintillation Spectrometry* (Ref. Z6428Z).
- New Standard, *Guide for Determination of Technetium-99 in Soil* (Ref. Z6688Z).

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Standards Actions (Continued from Page 9)

- New Standard, *Test Method for Radiochemical Determination of Uranium Isotopes in Urine by Alpha Spectrometry* (Ref. Z6744Z).
- New Standard, *Test Method for Gas and Vapor Permeation Rates Through Geomembrane Materials* (Ref. Z6846Z).
- New Standard, *Guide for Selection of Drilling, Methods for Environmental Site Characterization* (Ref. Z6866Z).
- Provisional, *Test Methods for the Determination of Fracture Toughness of Advanced Ceramics at Ambient Temperatures* (Formerly PS 70-97).
- C 1174-91, *Practice for Prediction of the Long-Term Behavior of Waste Package Materials Including Waste Forms Used in the Geologic Disposal of High-Level Nuclear Waste* (revised standard).
- D 5847 New Standard, *Practice for Writing Quality Control Specifications for Standard Test Methods for Water Analysis*.

The following newly published standards are available from ASTM:

- C 1369-97, *Specification for Edge Sealants for Structurally Glazed Insulating Glass Units* (new standard).
- C 1371-97, *Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers* (new standard).
- E 336-97, *Test Method for Measurement of Airborne Sound Insulation in Buildings* (revised standard).
- F 1359-97, (Includes change to title), *Test Method for Determining the Liquid Penetration Resistance Protective Clothing or Protective Ensembles Under a Shower Spray Wheel on a Mannequin* (revised standard).

American National Standards Projects Initiated

The following is a list of proposed new American National Standards or revisions to existing American National Standards submitted to ANSI by accredited standards developers. DOE employees or contractors interested in participating in these activities should contact the appropriate standards developing organization. DOE-TSL-4 lists the DOE representatives on NGS committees. If no DOE representative is listed, contact the TSPO for information on participating in NGS activities.

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

Office: 1791 Tullie Circle, NE
Atlanta, GA 30329-2305

Contact: Jim Heldenbrand
FAX: 404-321-5478
Email: jheldenb@ashrae.org

- ASHRAE 62.1P, *Ventilation and Acceptable Indoor Air Quality in Commercial, Institutional, and High-Rise Residential Buildings* (new standard).

American Society for Testing and Materials

Office: 100 Barr Harbor Drive
West Conshohocken, PA 19428

Contact: Katharine Morgan

FAX: 610-832-9666

Email: kmorgan@astm.org

- ASTM Z7092Z, *Specification for Polymer Concrete Pipe* (new standard).

Environmental Industry Associations

Office: 4301 Connecticut Avenue, NW
Suite 300
Washington, DC 20008

Contact: John A. Legler

FAX: 202-966-4824

Email: jlegler@envasns.org

- Z245.71, *Equipment Technology and Operations for Wastes and Recyclable Materials - Industrial Mobile Tub Grinders - Safety Requirements* (new standard.)

International Society for Measurement and Control

Office: 67 Alexander Drive
Research Triangle Park, NC 27709

Contact: Lois M. Ferson

FAX: 919-549-8288

Email: lferson@isa.org

- ISA SP5.7, *Development and Use of Process Flow Diagrams and Piping and Instrument Diagrams* (new standard).

Underwriters Laboratories, Inc.

Office: Walt Whitman Road
Melville, NY 11747-3081

Contact: Helen Ketcham

FAX: 516-439-6021

Email: ketchamh@ul.com

- UL 1666, *Test for Flame Propagation Height of Electrical and Optical-Fiber Cables Installed Vertically in Shafts* (revision of ANSI/UL 1666-1987)

Comments, Questions, and Addresses

Comments: If you have any questions or comments, please contact Rick Serbu, EH-31, Manager, DOE Technical Standards Program Office (TSPO), 301-903-2856, FAX 301-903-6172, Email Richard.Serbu@eh.doe.gov. If you have any questions or comments on DOE standards projects, please contact Don Spellman, Oak Ridge National Laboratory (ORNL), 423-574-7891, FAX 423-574-0382, Email spellmandj@ornl.gov.

Addresses: To update our distribution list, please contact Marty Marchbanks, ORNL, 423-241-3658, FAX 423-574-0382, Email mmf@ornl.gov.

The TSPO would like to be kept informed of the status of technical standards that are being prepared or coordinated for DOE. Please provide this information to the TSPO at 423-574-7886, Email lj8@ornl.gov.

Topical Committee Developments



The DOE Technical Standards Program

(TSP) is continuing its efforts to identify and recognize both existing and new groups of DOE and/or contractor subject matter experts as "topical committees." The TSP Topical Committee (TC) activity was undertaken to enhance the Department's implementation of the movement from an internal standards base to the preferential use of voluntary, private-sector standards mandated by Public Law 104-113 and Office of Management and Budget Circular A-119. There are now 12 official TCs, six of which are TRADE Special Interest Groups. The newest TC is the Supplier Quality Information Group or SQIG TC. The SQIG TC has a signed charter and their home page is featured on the TSP Home Page.

An initial workshop was held at Sandia National Laboratories in Albuquerque, NM, in August 1997, to propose the formation of a Laboratory Accreditation TC under the TSP. An Accreditation TC was voted into existence on August 28, 1997 (see related article). This Accreditation TC is a thirteenth TC; it will be recognized on the TSP Home Page when a point of contact is selected and the group is more formally organized. In addition, preliminary discussions have been held with groups of subject matter experts in the areas of construction, hoisting and rigging, and ISO 14000 that appear interesting in becoming TCs under the TSP.

Are you a member of a working group or technical group that would like to be recognized across the DOE complex? Do you want to share ideas with like-minded scientists and engineers within the Department? Would you like to be more involved in standards work? If you have a group of subject matter experts that would like to affiliate with the TSP as a topical committee, contact M. Norman Schwartz, 301-903-2996, Email Norm.Schwartz@eh.doe.gov, or Richard Serbu, 301-903-2856, Email Richard.Serbu@eh.doe.gov.

Topical Committee on Accreditation—Workshop



On August 27 and 28, 1997, the DOE Technical Standards Program and Sandia National Laboratories hosted a workshop on accreditation activities within the DOE complex. The purpose was to organize a forum for DOE M&O contractors and subcontractors that would identify DOE accreditation activities, and establish an accreditation support network within the complex. The workshop attracted managers, associates, and representatives in the accreditation arena and other interested personnel working actively in the area of accreditation at DOE facilities.

The recent proposed formation of the National Council for Laboratory Accreditation (NACLA) was a key driver for conducting the workshop. NACLA will be an umbrella for American accrediting organizations in coordinating U.S. accreditation activities and interacting with the international community to form international agreements. DOE laboratories stand to be-

come significant players in this national and international movement.

The workshop participants met with two major goals in mind:

- to identify accreditation needs within DOE, and
- to form a committee for spearheading DOE accreditation efforts based on those identified needs.

The attendees participated in a series of breakout sessions that addressed those goals. They concluded that a DOE Topical Committee on Accreditation (Committee):

- would not be in competition with other accreditation organizations,
- could serve as an "umbrella" to represent DOE accreditation interests,
- could be a focal point for the DOE community on accreditation issues, and
- could be a conduit to NACLA for the DOE accreditation community.

Consequently, the assembly voted 36 to 5 in favor of forming such a Committee.

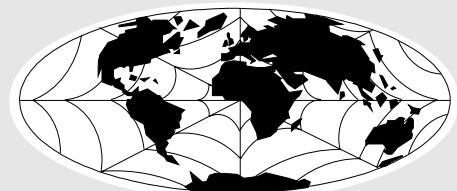
Before concluding the workshop, 12 individuals from throughout the complex volunteered to serve on an Interim Steering Committee (ISC) that would coordinate the formation of the committee. That group held a preliminary organizing meeting immediately following the workshop to initiate steps toward committee formation. The ISC plans to meet in the near future to plan the first annual complex-wide meeting of the committee and begin preparations for meeting the goals established at the workshop.

For more information, contact Bob Wayland at 505-845-9771, Email jrwayla@sandia.gov or Dick Pettit at 505-844-6242, Email rbpetti@sandia.gov.



Be an early bird!

The Standards Forum and Standards Actions are a part of the Technical Standards Program (TSP) Home Page, which features lists of Technical Standards, lists of personnel involved in TSP and non-Government standards activities, hot links to other technical standards organizations, and much more!



You can catch us at our NEW home page:

<http://apollo.osti.gov/html/techstds/techstds.html>

The Value of Registration . . . (Continued from Page 1)

Environmental Management Systems

An EMS may be defined as "that part of the overall management system which includes organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing, and maintaining the environmental policy" of an organization. An effective EMS can help an organization manage, measure, and improve the environmental aspects of its operations. An EMS recognizes that almost all activities performed by an organization may have an impact on the environment. This suggests that the field of application for the EMS standards may be broader than that for the QMS standards.

The ISO 14000 EMS Standards

Two EMS standards have been approved by ISO: ISO 14001, which provides the core requirements for the EMS, and ISO 14004, which provides guidelines for an optimal environmental management system. Like ISO 9000, all of the ISO 14000 series of standards are voluntary. ISO 14001 is the specification standard and, consequently, provides the basis for third-party EMS registration. ISO 14001 may also be used for internal self-declaration purposes. Like the ISO 9001/9002/9003 standards, ISO 14001 could be mandatory as part of a two-party agreement (e.g., contract). Consequently, ISO 14001 uses "shall" to indicate the specification nature of the standard and contains only those requirements that may be objectively audited for registration or self-disclosure.

ISO 14004 (and the other standards in the ISO 14000 series) are guides and use terms like "should" and "may" to underscore the non-mandatory nature of those standards. ISO 14004 contains examples and descriptions pertaining to the development and implementation of an EMS and provides principles on how to coordinate the EMS with other management systems. ISO 14004, like ISO 9004, is intended to be a voluntary, internal management "tool" and is not intended for use by registrars as a specification standard.

Users familiar with the ISO 9000 QMS standards will recognize the analogies of ISO 14001 and ISO 14004 to ISO 9001

and ISO 9004. This is not coincidental, but is intended to indicate an early recognition by ISO that many of the underlying concepts in EMS were the same as in QMS. ISO subsequently directed its Technical Committee (TC) 207, which is responsible for developing the ISO 14000 EMS standards, to coordinate plans and activities with TC 176, which is responsible for developing the ISO 9000/10000 series of QMS standards. This coordination directive was given to TC 207 in order to "harmonize" the EMS and QMS standards to the extent possible.

TABLE 1 - Comparison of ISO 14001 elements to ISO 9001 by relevant clause number

ISO 14001 ELEMENT	ISO 14001 CLAUSE	ISO 9001 CLAUSE
GENERAL	4.1	4.2.1
ENVIRONMENTAL POLICY	4.2	4.1.1
PLANNING	4.3	4.2.3
Environmental Aspects	4.3.1	
Legal & Other Requirements	4.3.2	4.3
Objectives & Targets	4.3.3	
Environmental Mgmt. Program	4.3.4	4.2.2, 4.2.3
IMPLEMENTATION & OPERATION	4.4	
Structure & Responsibility	4.4.1	4.1.2
Training, Awareness & Competence	4.4.2	4.1.8
Communication	4.4.3	
EMS Documentation	4.4.4	4.2.2
Document Control	4.4.5	4.5
Operational Control	4.4.6	4.2.2, 4.9
Emergency Preparedness	4.4.7	
CHECKING & CORRECTIVE ACTION	4.5	
Monitoring & Measurement	4.5.1	4.10, 4.11, 4.12, 4.20
Non-Conformance & Corrective/ Preventive Actions	4.5.2	4.13, 4.14
Records	4.5.3	4.16
EMS Audit	4.5.4	4.17
MANAGEMENT REVIEW	4.6	4.1.3

ISO 14001 and ISO 9001 Comparison

As specification standards, both ISO 9001 and ISO 14001 contain the requirements necessary to plan and implement effective management systems. The key common elements contained in ISO 9001 and ISO 14001 are:

- management responsibility
- corrective action
- internal audits
- training
- records
- management review
- nonconformance control
- document control
- operational control

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The Value of Registration . . . (Continued from Page 12)

ISO 14001 embodies the “plan, implement, check, and review” theme used in ISO 9001 and promotes the concept of “continual improvement” as well. Both provide a systematic method of controlling an organization’s relevant processes and activities to produce an expected outcome.

A comparison of the elements in ISO 14001, with the relevant clauses of ISO 9001 identified by number, is given in Table 1. It should be noted that the elements listed in Table 1 can be categorized into three distinct groups—direct overlap/relationship to each other, indirect overlap/relationship to each other, or no overlap/relationship to each other. There are also elements of ISO 9001, not listed in Table 1, that have no overlap to ISO 14001. When actually comparing the standards side by side, also note that there are nuances in the way that the clauses (elements) are worded and phrased. None of the clauses share the exact same wording. The intent is the same, but the phrasing is different.

Why Register?

Having identified the many similarities between ISO 9001 and ISO 14001, the question in the mind of most managers is, “Our company is already registered to ISO 9001, why should we register to ISO 14001?” Aside from the obvious difference in focus between the two series of standards, i.e., quality and environmental management systems, there are numerous other reasons why an ISO 9000 registered company should seek ISO 14001 registration.

Internal forces upon a company that may cause it to seek registration include, but are not limited to:

- A company would have the ability to create a coordinated management process between the quality and environmental management systems; this could also include coordination of the company’s occupational health and safety system/program as well.
- Quality and environmental management systems have a continuous impact upon a company. They are always changing based on technology, process, and regulatory changes.
- Most of the expense of EMS registration is in the reallocation

ISO 14004—EMS Guidelines Standard

ISO 14004 provides guidelines for implementing ISO 14001 and builds on the concept of “continual improvement” used in ISO 14001. ISO 14004 differs from ISO 9004 more than ISO 14001 differs from ISO 9001, but these differences largely reflect the respective fields of application. ISO 14004 is aimed primarily at a single organization that is attempting to establish an internal EMS. ISO 9004, however, places more emphasis on external “customer-supplier” relationships. ISO 14004 is presented in a more user friendly manner than the latest version of ISO 9004. This does not diminish the usefulness of either standard in providing guidance on EMS and QMS implementation.

A comparison of the key elements (or clauses) in ISO 14004 and ISO 9004 indicates that similar discussions may be found in ISO 9004, but not always on a one-to-one basis. This is due largely to the differences in structure between the two documents. The results of the comparison are given below.

ISO 14004 ELEMENT	CORRESPONDING ISO 9004 ELEMENT(S)	
1 Commitment and Policy	4	Management Responsibility
	5	Quality System Elements
	18	Personnel
2 Planning	5	Quality System Elements
	7	Quality in Marketing
	8	Quality in Specification and Design
	10	Quality of Processes
3 Implementation	5	Quality System Elements
	6	Financial Considerations of Quality Systems
	11	Control of Processes
	14	Control of Non-Conforming Product
	17	Quality Records
	19	Product Safety
4 Measurement and Evaluation	5	Quality System Elements
	12	Product Verification
	13	Control of Inspection, Measuring, and Test Equipment
	14	Control of Non-Conforming Product
	15	Corrective Action
5 Review and Improvement	5	Quality System Elements
	7	Quality in Marketing
	8	Quality in Specification and Design

It is expected that future revisions of ISO 9004 will result in a more user-friendly presentation and possibly greater resemblance to ISO 14004.

tion of costs already identified as part of company operations. Money has already been invested in maintaining a QMS that shares many common elements with the EMS. The cost of environmental compliance, waste disposal, etc., is also already factored into a company’s operations.

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The Value of Registration . . . (Continued from Page 13)

- Implementation of an EMS allows a company to attain very significant cost reductions. There is data to support that companies who have registered to ISO 14001 have identified cost savings as one of their first and most noted improvements after implementation of an EMS.
- Overall environmental management leads to better environmental compliance management.
- Employee involvement and participation in the EMS leads to improved employee morale as employees take an active part in environmental issues and in "saving the environment."

External forces upon a company that may cause it to seek registration include, but are not limited to:

- competitive advantage;
- potential reduction in insurance premium expenses;
- customer demands or requirements;
- enhanced positive public image;
- possible reduction in assessments, reporting requirements, and fines by regulatory agencies;
- reduced international threat of non-tariff trade barriers; and
- some regulatory agencies already embrace ISO 9000 and ISO 14000 concepts.

Coordination, Harmonization, Integration, Etc.

Numerous terms have been utilized by various constituents when discussing the coordination and related issues surrounding TC 176 (ISO 9000) and TC 207 (ISO 14000).

Even Technical Advisory Group (TAG) 12, which was formed as a result of ISO's Technical Management Board (TMB) resolution E/1997 to "address the integration of the ISO 9000 and ISO 14000 series of standards," are having problems with the proper terminology. The TAG attempted to reach an agreed-upon understanding of the key terms and concepts used in the draft strategic framework document and the new TMB resolution. The key terms discussed were:

- compatible (compatibility)
- integrated (integration),
- aligned (alignment)
- consistent
- harmonized (harmonization)

Where available, related definitions from ISO/IEC Guide 2; 1996 were also discussed.

What this means is that no matter what term or terms are used to describe the relationship between the ISO 9000 series and the ISO 14000 series, everyone, even at the international level, recognizes that there is a relationship between the two series of standards. That recognition is a windfall to organizations who plan on implementing and registering their EMS—especially to those organizations who plan on "integrating" to some degree their quality management system and their environmental management system.

Conclusion

By the end of 1996, ISO 14001, 14004, 14010, 14011, and 14012 were issued by ISO as the first international standards on environmental management systems and EMS auditing. The use of these standards will enable organizations to improve their environmental performance and, as voluntary standards, they will permit broad flexibility in their implementation. More importantly, perhaps, is that their similarities to the ISO 9000 and 10000 series of standards will make implementation advance more smoothly and at a lower cost to the user with an ISO 9000-compliant quality management system in place.

Environmental Auditing Standards

Auditing is a process. Even though the audit processes for quality management evaluation and environmental management evaluation are described by different international standards, ISO 10011-1 and ISO 10011-2 and ISO 14010, 14011, and 14012, respectively, there are many conceptual similarities and common underlying principles among them. Such commonalities will enable the user already familiar with the ISO 10011 standards to more readily utilize the environmental auditing standards from ISO.

The three areas of work addressed by the ISO 14000 environmental auditing standards are:

- general principles for all environmental auditing (ISO 14010),
- audit procedures for EMS audits (ISO 14011), and
- qualification for environmental auditors (ISO 14012).

In the cases of ISO 14011 and ISO 14012, there are corresponding quality auditing standards, i.e., ISO 10011-1 and 10011-2, respectively. There presently is no ISO 10000 series quality standard that corresponds to ISO 14010 on general principles of environmental auditing.

Answers to Frequently Asked Questions (Continued from Page 2)

You have a couple of options. Existing groups, e.g. TRADE Special Interest Groups, can become topical committees by expanding their current charter to reflect the requirements in DOE-TSP-11 (DOE Technical Standards Program Topical Committees). TSP-11 describes how topical committees are organized and recognized under the TSP. It explains what the TSP expects from a DOE topical committee: preparation and review of technical standards, interfacing with voluntary standards organizations, and reporting to the TSP. Alternately, if a group within DOE identifies a need associated with a standards activity, they can form a topical committee. The usual procedure has been for them to first identify a membership for the committee, and then organize a workshop to explore the feasibility of forming the topical committee. If the workshop determines the need for the committee, those attending it can begin the formation themselves. Sandia National Laboratories has been actively involved in the formation of DOE topical committees. Sandia has published "Forming a DOE Topical Committee: A How-To Manual." You can obtain more information and a copy of their manual by contacting Bob Wayland, 505-845-9771, or Email jrwayla@sandia.gov, or Richard Serbu, 301-903-2856, Email

Richard.Serbu@eh.doe.gov.



Upcoming Meetings

March 10-11, 1998

Information Infrastructure Standards Panel (IISP) Meeting

Location: To be determined

For more information, contact Michelle Maas, ANSI Staff, 212-642-4884, Email mmaas@ansi.org.



May 17-21, 1998

NFPA—1998 Annual Meeting & Fire Safety Exhibit

Cincinnati Convention Center - Cincinnati, Ohio

The National Fire Protection Association (NFPA) meeting will include subjects such as Fire Codes and Standards.

For more information, call 617-984-7310 or check the NFPA home page at URL <http://www.nfpa.org/>.

June 7-11, 1998

1998 American Nuclear Society (ANS) Annual Meeting

Opryland Hotel - Nashville, Tennessee

A call for papers has been issued; the deadline for submissions is January 9, 1998. Full details for submission are available on the Internet at URL <http://www.ans.org/meetings/Nashville.98/>.

June 15-19, 1998

Olympia Park Hotel and Conference Center - Park City, Utah

1998 Safety Analysis Workshop

Theme: *Integrating Safety Analysis into Safety Management*

This workshop is sponsored by the Safety Analysis Working Group (SAWG) of the DOE Energy Facility Contractors Group (EFCOG). It will focus on the integration of the safety analysis process into work planning and other processes. A call for papers has been issued for a number of subject areas, including Standards Development, Work Smart Standards, Nuclear Facility Safety Analysis, and others.

For more information, contact John W. Rice, Jr., Workshop Chair, 208-526-4206, E-mail wjr@inel.gov. The EFCOG/SAWG home page is located at URL <http://www.llnl.gov/efcog/>.

September 21-25, 1998

1998 World Standards Week

Washington, D.C.

For more information, contact Stacy Leistner, ANSI staff, 212-642-4931 or Email sleistne@ansi.org.



The OSTI Corner

The New DOE Technical Standards Program (TSP) Home Page

By Madelyn Wilson, Office of Scientific and Technical Information (OSTI)

The newly redesigned DOE Technical Standards Program Home Page was featured during the TRADE Conference in Denver, CO on December 4-5, 1997. The concept for the new home page focused on using technological advancements to create a more intuitive information retrieval system for the standards audience. Five major topic levels of information appear on the Home Page, moving users to sub-menus of specific areas of interest much faster, eliminating countless "screen changes" as was the case before the redesign.

Frames technology is used to allow simultaneous viewing of information on the same browser page. Search information will remain visible while retrieved information is displayed alongside the search data fields, allowing the user to update and streamline search parameters more readily.

To enhance the searching of both PDF and HTML documents, OpenText^(TM) software was selected. A full-text platform-independent searching capability is provided that supports all World Wide Web browsers such as Netscape^(TM) and Microsoft Internet Explorer^(TM). The specific capabilities of the OpenText^(TM) search engine as implemented for the DOE technical standards are:

- search for a single word or a group of words;
- search for a phrase of any length;
- search with Boolean logic operators;
- stem searching;
- document ranking or relevance ranking to make searches more productive; and
- search, retrieve, and view any document resulting from the search query.

The search screen allows field searching in the following categories:

- keyword search;
- document number;
- document number ranges; and
- functional areas.

In addition, to achieve the total functionality of the search engine, it is recommended for users to download and integrate Acrobat[®] Reader[®] 3.01 with Search into the web browser.

The Home Page will continue to serve as the primary tool in the promotion of electronic dissemination of technical standards documents as the TSP approaches the new millennium. Search engine advancements, revisions to the architectural hierarchy of information, and expanded topics of interest will continue to meet user requirements. The Home Page is designed with the end user in mind. User feedback will continue to be essential in making this product as efficient and effective as possible.

News Briefs (Continued from page 6)

3. Revision to the Technical Standards Program Procedures (TSPP) - Don Williams briefly described the progress made in the latest revision to the TSPPs. This general update is being performed to: (1) ensure that the TSPPs are consistent with the latest revision to OMB Circular A-119, and (2) clarify the standards coordination process. The revision is scheduled to be published in May 1998. TSMs will be requested to comment on a draft revision to the TSPPs in March 1998.
4. DOE Topical Committees (TC) - Norm Schwartz gave a brief review of the new contacts made since the last TSMC meeting in July 1997. There are now 12 "official" TCs, with two more in the organization process. There have been some encouraging reports from the TCs, indicating that the TC activity has been of definite value to the participants.
5. Department Standards Committee (DSC) - Mitch Kunich presented the highlights of the recent meeting of the DSC. Three Standards Process Action Teams (SPATs) are currently active: (1) SPAT 14 - Communication/Information Flow, (2) SPAT 15 - Assessment, and (3) SPAT 16 - Integration. The next DSC meeting will be held in Washington, D.C. on December 11, 1997.
6. Redesign of the TSP Home Page - Madelyn Wilson gave a presentation on the redesigned TSP home page. Three primary principles guided the redesign and development efforts. These principles were functionality, navigational ease, and the architectural hierarchy of the information. The new home page was placed into operation on December 2, 1997.
7. Status of TSP Projects - Don Spellman enumerated the revisions, change notices, cancellations, and reaffirmations that took place during FY 1997.
8. Update on ANSI's National Standards System Network (NSSN) - Rick Serbu distributed a news release copied from the Internet that announced the introduction of NSSN Enhanced, a standards information service from ANSI that is available on the Internet. The service features powerful search capabilities and detailed standards information.
9. ISMS Implementation - Mosi Dayani and Bob Wayland gave brief summaries of ISMS-related activities at the Savannah River Site and Sandia National Laboratories, respectively.
10. NRC Regulation of DOE Nuclear Facilities - Don Williams summarized the progression of external regulation initiatives from 1992 to the November 21, 1997, NRC press release that announced the signing of a Memorandum of Understanding with DOE for a pilot program involving three DOE facilities during FY98, and 6-10 facilities over 2 years. Three areas potentially relevant to the TSP include (1) regulatory agencies' interest in the degree of compliance against "standards" (regulations, regulatory guides, relevant technical reports, etc.) and "Standards" (applicable voluntary, Federal, and DOE standards), (2) the possible assumption of regulatory/licensing duties by TSMs, and (3) the increasing importance of the selection of standards, standards use, and the

characterization of standards use in safety analyses or DOE/contractor submittals to regulatory authorities.

11. 5-Year Review of DOE Technical Standards - Marty Marchbanks explained the maintenance process for "Sunset" technical standards, i.e., those that will reach the age of five years during the current FY. At the beginning of each FY, the TSPO will determine which technical standards meet the Sunset criteria, and send a list of these standards to all TSMs. The TSMs will then have one year to determine and initiate, for standards within their responsibility, the appropriate disposition (revision, reaffirmation, change notice, inactivation, or cancellation). A list of technical standards meeting the five-year criteria for FY 1998 was distributed.
12. 1998 Editions of TSL-1 and TSL-4 - Don Williams outlined the plans for the FY 1998 update of TSL-1, *DOE Technical Standards List—Department of Energy Standards Index*, and TSL-4, *DOE Technical Standards List—Directory of DOE and Contractor Personnel Involved in Non-Government Standards Activities*. The projected publication date for both documents is May 1998. TSPO communications with the TSMs will continue for the purpose of obtaining input for the update activities.
13. 1998 TSP Workshop - The target date for the next workshop is the summer of 1998. The desired location is the Loews L'Enfant Plaza Hotel. Co-sponsors for the workshop are being sought; contacts are being made with DOC/NIST, DoD, and EPA.

The next TSMC meeting will be held in conjunction with the 1998 TSP Workshop (tentatively scheduled for August 2-6, 1998, in Washington, D.C.).



Standards

Forum

Editor Marty Marchbanks

Distribution: If you would like to have your name added to (or removed from) the mailing list for this publication, or you need to make an address change, please notify Marty Marchbanks, Oak Ridge National Laboratory (ORNL), 423-241-3658; FAX: 423-574-0382; Email: mmf@ornl.gov.

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